Kentucky Department of Education - Course Standards

Course Standards

Course Code: 902010

Course Name: Technology Competency (Computer Lab)

Grade Level: 6-8

Upon course completion students should be able to:

Big Idea: Information, Communication and Productivity

Students demonstrate a sound understanding of the nature and operations of technology systems. Students use technology to learn, to communicate, increase productivity and become competent users of technology. Students manage and create effective oral, written and multimedia communication in a variety of forms and contexts.

Academic Expectations

1.11 Students write using appropriate forms, conventions, and styles to communicate ideas and information to different audiences for different purposes.

1.16 Students use computers and other kinds of technology to collect, organize, and communicate information and ideas.

3.3 Students demonstrate the ability to be adaptable and flexible through appropriate tasks or projects.

6.1 Students connect knowledge and experiences from different subject areas.

6.3 Students expand their understanding of existing knowledge by making connections with new knowledge, skills, and experiences.

Middle Enduring Knowledge – Understandings *Students will*
understand that
appropriate terminology, proper keyboarding, computer operations and applications assist to gain confidence in the use of technology. technology (e.g. keyboarding, word processing, spreadsheets, databases, hardware, scanners, digital and video cameras) is used effectively and efficiently to accomplish a task.
technology is used to communicate in a variety of ways. productivity tools are
used effectively and efficiently to accomplish a task.

Middle Skills and Concepts – Information
Students will
use a variety of technology (e.g., probeware, handhelds, digital and video cameras, scanners) to collect, analyze and present in all content areas
recognize, discuss and use terms/concepts related to the protection of computers, networks and information (e.g., virus protection, network security, passwords, firewalls, privacy laws) use proper keyboarding techniques, optimal posture and correct hand placement (e.g., continue appropriate finger reaches and building speed)

Middle Skills and Concepts – Communication
Students will
use technology to communicate in a variety of modes (e.g., audio, speech to text, print, media) select and use appropriate technology to collect, analyze and share information
use online collaboration and interactive projects (e.g., email, videoconferencing) to communicate with others (e.g., experts, mentors)
use a variety of electronic formats (e.g., web publishing, oral presentations, journals and multimedia presentations) to summarize and communicate results

Middle Skills and Concepts – Productivity

Students will

use productivity tools to complete content assignments and projects

construct and publish information in printed and digital formats (e.g., printed reports, resumes, brochures, charts, multimedia presentations, videos and websites) for authentic audiences use technology to develop innovative and creative products

Big Idea: Safety and Ethical/Social Issues

Students understand safety and ethical/social issues related to technology. Students practice and engage in safe, responsible and ethical use of technology. Students develop positive attitudes toward technology use that supports lifelong learning, collaboration, personal pursuits and productivity.

Academic Expectations

2.17 Students interact effectively and work cooperatively with the many ethnic and cultural groups of our nation and world.

3.6 Students demonstrate the ability to make decisions based on ethical values.

4.3 Students individually demonstrate consistent, responsive and caring behavior.

4.4 Students demonstrate the ability to accept the rights and responsibilities for self and others.

4.5 Students demonstrate an understanding of, appreciation for and sensitivity to a multi-cultural and world view.

Middle Enduring Knowledge – Understandings *Students will understand that*

collaborative and interactive projects use technology to enhance learning.

acceptable technology etiquette is essential to respectful social interactions and good citizenship.

ethical use of technology is necessary to ensure safety, privacy and legal issues. technology is used in occupations as a basic skill to be successful and productive in a global society. assistive technology supports learning to ensure equitable access to a productive life.

Middle Skills and Concepts – Safety *Students will*

explain the importance of safe Internet use (e.g., iSafe skills) apply safe behavior when using technology

Middle Skills and Concepts – Ethical Issues *Students will*

describe intellectual property issues related to technology

practice responsible (e.g., virus protection, passwords) use of technology adhering to the Acceptable Use Policy (AUP) as well as other state and federal laws

model ethical behavior relating to security, privacy, passwords and personal information and recognize possible consequences of misuse

use legal and ethical practices when completing digital projects/school work and credit all participants for their contribution to the work

investigate basic issues related to responsible use of technology and describe personal consequences of inappropriate use

investigate software piracy, its impact on the technology industry and possible repercussions to individuals and/or the school district

Middle Skills and Concepts – Human Issues *Students will*

use appropriate behavior related to computers, networks, digital information (e.g., security, privacy, passwords, personal information)

use proper social etiquette with any technology (e.g., email, blogs, IM, telephone, help desk) while collaborating with peers, experts and others

use technology to engage in interactive projects in the classroom

describe how societal expectations drive the acceptance and use of new products and systems investigate how the use of technology affects humans in various ways (e.g., safety, comfort, choices and attitudes)
explore how technology is used in different occupations
engage technology to support learning (e.g., online courses, online assessments)
conclude that assistive technology supports learning to ensure equitable access to a productive life

Big Idea: Research, Inquiry/Problem-Solving and Innovation

Students understand the role of technology in research and experimentation. Students engage technology in developing solutions for solving problems in the real world. Students will use technology for original creation and innovation.

Academic Expectations

1.1 Students use reference tools such as dictionaries, almanacs, encyclopedias, and computer reference programs and research tools such as interviews and surveys to find the information they need to meet specific demands, explore interests, or solve specific problems.

2.3 Students identify and analyze systems and the ways their components work together or affect each other.

5.1 Students use critical thinking skills such as analyzing, prioritizing, categorizing, evaluating, and comparing to solve a variety of problems in real-life situations.

5.2 Students use creative thinking skills to develop or invent novel, constructive ideas or products.

5.4 Students use a decision-making process to make informed decisions among options.

5.5 Students use problem-solving processes to develop solutions to relatively complex problems.

6.1 Students connect knowledge and experiences from different subject areas.

Middle Enduring Knowledge – Understandings *Students will understand that* technology supports creative thinking and implementation of new ideas to reach goals. technology supports critical thinking skills used in inquiry/problem solving to make informed decisions.
technology assists in researching, analyzing and evaluating information obtained from a variety of sources to answer an essential question across all content areas. technology is used to analyze real world data through inquiry/problem solving in order to produce results. technology problem solving strategies is applied to innovative design for authentic, creative and real world applications.

Middle Skills and Concepts - Research
Students will
demonstrate an understanding of the strengths and limitations of the Internet
apply a research process model (e.g., Big6, Research Cycle) to conduct online research locate and collect information from a variety of electronic resources (e.g. search engines, CDROM, online periodical databases, Virtual library/online catalogs, interactive video conferencing) and correctly cite sources
evaluate the accuracy and appropriateness of electronic information
organize information that is collected using a variety of tools (e.g., spreadsheet, database, saved files)
communicate results of research and learning with others using the most appropriate tools (e.g., desktop-published or word-processed report, multimedia presentation)
manipulate data using charting tools and graphic organizers (e.g., concept mapping, flow charting and outlining software) to connect ideas and organize information

Middle Skills and Concepts – Inquiry/Problem-solving
Students will
use appropriate technology and strategies to solve content-specific problems in the real-world determine which technology is useful and select the appropriate tool(s) (e.g., calculators, data collection probes, videos, educational software) to inquire/problem- solve in self-directed and extended learning apply strategies for

identifying and solving minor hardware and software problems use technology to solve problems using critical thinking and problem-solving strategies

explore how inquiry/problem-solving impact science, technology, engineering and mathematics (STEM) (e.g., design, programming, robotics)

Middle Skills and Concepts – Innovation *Students will*

use technology to express creativity in all content areas

design, develop, publish and present original, innovative products (e.g., Web pages, video, robotics, online content)

collaborate with peers, experts and others to develop solutions and innovative products (e.g., design/CAD, troubleshooting, helpdesk, models, systems)

describe how technological innovation often results when ideas, knowledge or skills are shared within a technology

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Academic Expectations

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2.3 Students identify and analyze systems and the ways their components work together or affect each other.

5.1 Students use critical thinking skills such as analyzing, prioritizing, categorizing, evaluating, and comparing to solve a variety of problems in real-life situations.

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Intermediate Enduring Knowledge – Understandings

Students will understand that

- technology assists in gathering, organizing and evaluating information from a variety of sources to answer essential questions.
- technology supports critical thinking skills used in inquiry/problem solving to make informed decisions.
- technology is used to produce an innovative product or system.

Intermediate Skills and Concepts – Research

Students will

- gather and use accurate information from a variety of electronic sources (e.g. teacher-selected web sites, CDROM, encyclopedias and automated card catalog, online virtual library; word processing, database, spreadsheet) in all content areas
- correctly cite sources
- evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources
- use technology tools to process data and report results
- use content-specific tools to enhance understanding of content (e.g., environmental probes, sensors, robotics, simulation software and measuring devices)

Intermediate Skills and Concepts – Inquiry/Problem-solving

Students will

- determine which technology is useful and select the appropriate tool(s) (e.g., calculators, data collection probes, videos, educational software) to inquire/problem- solve in self-directed and extended learning
- use technology to solve problems using critical thinking and problem-solving strategies
- solve content-specific problems using a combinations of technologies

Intermediate Skills and Concepts – Innovation

Students will

- use technology to organize and develop creative solutions, ideas or product

Big Idea: Safety and Ethical/Social Issues

Students understand safe and ethical/social issues related to technology. Students practice and engage in safe, responsible and ethical use of technology. Students develop positive attitudes toward technology use that supports lifelong learning, collaboration, personal pursuits and productivity.

Academic Expectations
2.17 Students interact effectively and work cooperatively with the many ethnic and cultural groups of our nation and world.
3.6 Students demonstrate the ability to make decisions based on ethical values.
4.3 Students individually demonstrate consistent, responsive and caring behavior.
4.4 Students demonstrate the ability to accept the rights and responsibilities for self and others.
4.5 Students demonstrate an understanding of, appreciation for, and sensitivity to a multi-cultural and world view.

Primary Enduring Knowledge – Understandings
Students will understand that
- responsible and ethical use of technology is necessary to ensure safety.
- technology enhances collaboration to contribute to a learning community.
- acceptable technology etiquette is essential to respectful social interactions and good citizenship.
- technology is used in jobs and careers to support the needs of the community.
- assistive technology supports learning to ensure equitable access to a productive life.

Primary Skills and Concepts – Safety
Students will
- explain the importance of safe Internet use (e.g., iSafe skills)
- use safe behavior when using technology

Primary Skills and Concepts – Ethical Issues
Students will
- use responsible and ethical behavior in using technology
- adhere to the Acceptable Use Policy (AUP) as well as other state and federal laws

Primary Skills and Concepts – Social Issues
Students will
- work cooperatively with peers, family members and others when using technology
- collaborate with peers, family members and others when using technology
- explain how technology is used in jobs and careers

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5.4 Students use a decision-making process to make informed decisions among options.

5.5 Students use problem-solving processes to develop solutions to relatively complex problems.

6.1 Students connect knowledge and experiences from different subject areas.

Primary Enduring Knowledge – Understandings

Students will understand that

- ☐ technology assists in gathering, organizing and evaluating information from a variety of sources to answer an essential question.
- ☐ technology is used to analyze real world data and support critical thinking skills through inquiry/problem-solving in order to produce results and make informed decisions.

Primary Skills and Concepts – Research

Students will

- ☐ use teacher-directed Internet sources as a resource for information
- ☐ use electronic resources to access and retrieve information

Primary Skills and Concepts – Inquiry/Problem-solving

Students will

- ☐ gather technology information/data and use for problem solving in all content areas
- ☐ describe at least one strategy for problem solving while using technology (e.g., inquiry/problem-solving software, troubleshooting technology issues)

Primary Skills and Concepts – Innovation

Students will

- ☐ use technology for original creations/innovation in classroom
- ☐ express creativity both individually and collaboratively using technology